

**U.S. Department of the Interior  
Bureau of Land Management**

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**Standards Determination Document**

**Railroad Pass (00601) Grazing Allotment**

**February, 2011**

**Location: White Pine County, Nevada**

**PREPARING OFFICE**

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# STANDARDS DETERMINATION DOCUMENT Railroad Pass (00601) Grazing Allotment

## Introduction

The Standards and Guidelines for Nevada's Northeastern Great Basin Area were developed by the Northeastern Great Basin Area Resource Advisory Council (RAC) and approved in 1997. Standards and guidelines are likened to objectives for healthy watersheds, healthy native plant communities, and healthy rangelands. Standards are expressions of physical and biological conditions required for sustaining rangelands for multiple uses. Guidelines point to management actions related to livestock grazing for achieving the standards.

This Standards Determination Document evaluates and assesses livestock grazing management achievement of the Standards and conformance with the Guidelines for the Nevada's Northeastern Great Basin Area for the Railroad Pass Allotment in the Ely District. This document does not evaluate or assess achievement of the Wild Horse and Burro or the Off Highway Vehicle Standards or conformance to their respective Guidelines.

The Railroad Pass Allotment was last evaluated against the Nevada's Northeastern Great Basin RAC Standards and Guidelines in November 2008. This document considers the finding of that evaluation as well as additional monitoring data that has been collected in recent years.

The Railroad Pass Allotment encompasses approximately 27,025 public land acres (*Appendix B—Maps* (p. ), Figure 2, "Railroad Pass Allotment Map" (p. )). The grazing permit area occurs entirely within White Pine County, and is situated approximately 75 miles northwest of Ely, Nevada. The western portion of this allotment borders the Battle Mountain BLM District and the northern portion borders the Elko BLM District. The allotment reaches from the ridge of the Diamond Mountain Range in the west to approximately Huntington Creek in the east. It is bounded in the north by the Elko-White Pine County Line and stretches approximately 12 miles south. This allotment occurs entirely within the Huntington Watershed.

The Railroad Pass Allotment is dominated by Inter-Mountain Basins Big Sagebrush Shrublands and Inter-Mountain Basins Montane Sagebrush Steppe with Great Basin Xeric Mixed Sagebrush Shrublands and Great Basin Pinyon-Juniper Woodlands. Dominate species of these plant communities include Wyoming big sagebrush (*Artemisia tridentata* ssp. *wyomingensis*), mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*), black sagebrush (*Artemisia nova*), pinyon-juniper (*Pinus monophylla* - *Juniperus osteosperma*). Smaller areas of mountain mahogany (*Cercocarpus ledifolius*), aspen (*Populus tremuloides*), and other woodlands also occur in the higher elevations. The Corta Seeding (1966) is a 1,038 acre crested wheatgrass (*Agropyron cristatum*) seeding.

The 2000 Railroad Pass Fire burned in the vicinity of Railroad Pass, including approximately 170 acres of the Railroad Pass Allotment. An unnamed fire in 1996 (225 acres), the 1974 Big Burn (1,305 acres), and the 1974 Small Burn (296 acres) all occurred entirely within the Railroad Pass Allotment. The Big Burn and the Small Burn were both re-seeded in 1975 with a mixture of Russian wildrye (*Psathyrostachys juncea*) and crested wheatgrass. These areas remain dominated by these grasses (*Appendix B—Maps* (p. ), Figure 5, "Railroad Pass Allotment, Fire History Map" (p. )).

The Railroad Pass Allotment provides habitat for mule deer (*Odocoileus hemionus*) and pronghorn (*Antilocapra americana*), with crucial summer mule deer habitat in the higher elevations of the

Diamond Range and a mule deer migration corridor. The Diamond Range is also unoccupied Rocky Mountain bighorn sheep (*Ovis canadensis canadensis*) habitat. The allotment provides habitat for animals such as coyotes (*Canis latrans*), rabbits (*Lepus* spp. and *Sylvilagus* spp.), badgers (*Taxidea taxus*), bobcats (*Lynx rufus*), grey and red foxes (*Urocyon cinereoargenteus* and *Vulpes vulpes*), sagebrush obligate birds such as sage sparrow (*Amphispiza belli*), and other small mammals, reptiles, and invertebrates. Also, several other species of migratory birds are known to have a distribution that overlaps with the allotment. BLM Special Status Species habitats known to occur in the area include Greater sage-grouse (*Centrocercus urophasianus*), pygmy rabbit (*Brachylagus idahoensis*), and several raptor species (*Appendix B—Maps* (p. ), Figure 7, “Railroad Pass Allotment, Special Status Species Habitat Map” (p. )).

The Railroad Pass Allotment is within the Diamond Hills South Wild Horse Herd Management Area (HMA). Wild horses use the entire allotment year-round. They generally winter at the lower elevations and summer in the higher elevations of the area (*Appendix B—Maps* (p. ), Figure 4, “Railroad Pass Allotment, Diamond Hills South Wild Horse Herd Management Area Map” (p. )).

There are three grazing permits that authorize livestock grazing on the Railroad Pass Allotment. These current term grazing permits are summarized in tables below.

**Table 1. Summary of the Current Grazing Permit for 2704502 on the Railroad Pass Allotment**

Allotment Name and Number	Livestock Number/ Kind	Grazing Period	% Public Land <sup>a</sup>	Type Use	AUMs <sup>b</sup>
Railroad Pass 00601	265 Cattle	06/01 to 09/30	100	Active	1063
<b>Allotment AUMs Summary</b>					
Allotment Name	ACTIVE AUMS	SUS-PENDED AUMS	VOLUN-TARY NON USE AUMS	GRAZING PERMITTED USE (AUMs)	
Railroad Pass	1064	0	736	1800	

<sup>a</sup>% Public Land is the percent of public land for billing purposes.

<sup>b</sup>AUMs may differ from Active Permitted Use due to a rounding difference with the number of livestock and the period of use.



**Table 2. Summary of the Current Grazing Permit for 2704520 on the Railroad Pass Allotment**

<b>Allotment Name and Number</b>	<b>Livestock Number/ Kind</b>	<b>Grazing Period</b>	<b>% Public Land<sup>a</sup></b>	<b>Type Use</b>	<b>AUMs<sup>b</sup></b>
Railroad Pass 00601	75 Cattle	06/01 to 09/30	100	Active	301
<b>Allotment AUMs Summary</b>					
<b>Allotment Name</b>	<b>ACTIVE AUMS</b>	<b>SUS-PENDED AUMS</b>	<b>VOLUN-TARY NON USE AUMS</b>	<b>GRAZING PERMITTED USE (AUMs)</b>	
Railroad Pass	300	0	211	511	

<sup>a</sup>% Public Land is the percent of public land for billing purposes.

<sup>b</sup>AUMs may differ from Active Permitted Use due to a rounding difference with the number of livestock and the period of use.

**Table 3. Summary of the Current Grazing Permit for 2703638 on the Railroad Pass Allotment**

<b>Allotment Name and Number</b>	<b>Livestock Number/ Kind</b>	<b>Grazing Period</b>	<b>% Public Land<sup>a</sup></b>	<b>Type Use</b>	<b>AUMs<sup>b</sup></b>
Railroad Pass 00601	467 Sheep	04/05 to 11/15	100	Active	691
Railroad Pass 00601 Corta Seeding	365 Sheep or 73 Cattle	04/05 to 11/15	100	Active	540
<b>Allotment AUMs Summary</b>					
<b>Allotment Name</b>	<b>ACTIVE AUMS</b>	<b>SUS-PENDED AUMS</b>	<b>VOLUN-TARY NON USE AUMS</b>	<b>GRAZING PERMITTED USE (AUMs)</b>	
Railroad Pass	1231	0	0	1231	

<sup>a</sup>% Public Land is the percent of public land for billing purposes.

<sup>b</sup>AUMs may differ from Active Permitted Use due to a rounding difference with the number of livestock and the period of use.

Current livestock management practices for 2704502 have been implemented since the Final Multiple Use Decision (FMUD) for the Railroad Pass Allotment dated November 5, 1995 and through the Livestock Grazing Use Agreement for the Railroad Pass Allotment dated April 12, 2001. Current livestock management practices for 2704520 have been implemented through the Final Grazing Decision dated June 9, 2009 which carried forward actions from the FMUD for the Railroad Pass Allotment and the 2008 Standards Determination Document for the Railroad Pass Allotment. Management for 2704520 is also in accordance with the Livestock Grazing Agreement for the Railroad Pass Allotment dated April 12, 2001. Current livestock management practices for 2704538 have been implemented through the Final Grazing Decision dated April 1, 2010 which carried forward applicable actions from the FMUD for the Railroad Pass Allotment and the 2008 Standards Determination Document for the Railroad Pass Allotment.

The Corta Seeding is fenced into a separate pasture that is grazed by sheep or cattle during the summer months. The remainder of the Railroad Pass Allotment is split into two cattle grazing pastures. The Livestock Grazing Use Agreement for the Railroad Pass Allotment outlines a rest-rotation grazing system alternating summer cattle use between the North and the South Pastures. This agreement also calls for the voluntary non-use of approximately 40 percent of the cattle AUMs on the allotment. Sheep grazing occurs across both of these pastures. Sheep are generally trailed through the Railroad Pass Allotment in November (heading south) and return in mid-April to lamb on the allotment. Sheep are generally removed from the Railroad Pass Allotment in early June, however if they remain after June 1, they must graze only the higher elevations of the allotment. Some additional cattle use has occurred from cattle drift over the Diamond Mountains, mostly in the area of Railroad Pass.

Monitoring data on this allotment has been collected at key areas which have been established throughout the past 30 years. A summary of monitoring data for the Railroad Pass Allotment is in *Appendix A—Data Summary* (p. 19).

# Part 1. Standard Achievement Review

## Standard 1. Upland Sites

*Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate and land form.*

As indicated by:

- Indicators are canopy and ground cover, including litter, live vegetation and rock, appropriate to potential of the site.

### Determination:

- |                                     |   |
|-------------------------------------|---|
| <input checked="" type="checkbox"/> | Achieving the Standard  |
| <input type="checkbox"/>            | Not Achieving the Standard, but making significant progress towards achieving   |
| <input type="checkbox"/>            | Not Achieving the Standard, and not making significant progress toward standard |

### Guidelines Conformance:

- |                                     |  |
|-------------------------------------|--|
| <input checked="" type="checkbox"/> | In conformance with the Guidelines     |
| <input type="checkbox"/>            | Not in conformance with the Guidelines |

### Conclusions:

Monitoring data, field observations, and photo documentation indicate that the Railroad Pass Allotment has foliar and ground cover appropriate to the potential of the site. Site potential was determined from Ecological Site Descriptions (ESDs) and general knowledge of local ecosystems. Soils are being protected and stabilized by vegetation, litter, rocks, and biological crusts (Cover data is summarized in Table 8, "Railroad Pass Allotment Ground Cover 2010" (p. )).

Key area RR-1 occurs on a Cassiro-Belmill soil association (414; NRCS 1998) and typically possesses a stony to gravelly loam soil texture and a slight susceptibility to wind and water erosion. RR-1 has been seeded to Russian wildrye and crested wheatgrass following a wildfire. Monitoring data indicate that this key area has a vegetative cover of 39 percent with a litter cover of 2 percent.

Key area RR-3 occurs on a Palinor-Shabliss soil association (289; NRCS 1998) and typically has a gravelly loam soil texture and slight susceptibility to wind and water erosion. RR-3 has been seeded to Russian wildrye and crested wheatgrass following a wildfire. Monitoring data indicate that this key area has a vegetative cover of 45 percent with a litter cover of 24 percent and a rock cover of 2 percent.

Key area RR-4 occurs on a Fax-Hunnton-Cassiro soil association (1090; NRCS 1998) and typically ranges from a silt loam, stony loam, to a coarse sandy loam and has a slight susceptibility to wind or water erosion. The expected vegetative ground cover for this ecological site is 20-30 percent. Monitoring data indicate that this key area has a vegetative cover of 48 percent with a litter cover of 26 percent.

Key area RR-5 occurs on a Cassiro-Belmill soil association (414; NRCS 1998) and typically possesses a stony to gravelly loam soil texture and a slight susceptibility to wind and water erosion. RR-5 has been seeded to crested wheatgrass. Monitoring data indicate that this key area has a vegetative cover of 61 percent with a litter cover of 32 percent.

Key area RR–6 occurs on a Fax-Hunnton-Cassiro soil association (1090; NRCS 1998) and typically ranges from a silt loam, stony loam, to a coarse sandy loam and has a slight susceptibility to wind or water erosion. The expected vegetative ground cover for this ecological site is 25-35 percent. Monitoring data indicate that this key area has a vegetative cover of 62 percent with a litter cover of 14 percent and a rock cover of 1 percent.

Key area RR–7 occurs on a Cassiro-Belmill soil association (414; NRCS 1998) and typically possesses a stony to gravelly loam soil texture and a slight susceptibility to wind and water erosion. RR-1 has been seeded to crested wheatgrass. Monitoring data indicate that this key area has a vegetative cover of 56 percent with a litter cover of 31 percent.

Key area RR–8 occurs on a Segura-McIvey-Hutchley soil association (500; NRCS 1998) and typically ranges from gravelly loam to cobbly loam textures and is moderately susceptible to water erosion and slightly susceptible to wind erosion. The expected vegetative ground cover for this ecological site is 25-35 percent. Monitoring data indicate that this key area has a vegetative cover of 69 percent with a litter cover of 15 percent and a rock cover of 5 percent.

Soil movement forces at work within the allotment were noted as soil creep, wind, and water erosion. Soil creep is a natural mechanism dependent upon slope and gravity. Wind erosion occurs when velocity attains a critical speed where it can mobilize certain size soil particles and again is a natural process. Water erosion is found near draws and natural flows path locations and is dependent upon the fickleness of precipitation events as to its location, intensity, duration, and frequency. The ability of water to move particles is, like wind, related to velocity and particle size.

Three random monitoring points within sage-grouse habitat on the Railroad Pass Allotment have also had cover data collected in 2010. These data indicate vegetative cover of 30–46 percent with litter cover of 14–27 percent, rock cover of 1–6 percent, and biological crust cover of 0–2 percent.

Soil compaction and displacement are likely near watering sites and trails used by livestock. The degree and magnitude of impacts from livestock use are expected to be localized near trails and watering sites and are not expected to alter soil productivity or increase erosion potential. Minimal impacts to localized physical soil characteristics would not alter the infiltration or percolation rates of the soils on the Railroad Pass Allotment. As such, impacts to the soil resources resulting from livestock grazing would not affect the physical, chemical, or biological processes on or within the soil horizons.

The Railroad Pass Allotment meets or exceeds expected cover across the area and no other soil stability concerns have been identified. Proper ground cover is indicative of appropriate infiltration and permeability rates. Therefore, the Railroad Pass Allotment is meeting the Upland Sites Standard.

## **Standard 2. Riparian and Wetland Sites**

*Riparian and wetland areas exhibit a properly functioning condition and achieve state water quality criteria.*

As indicated by:

- Stream side riparian areas are functioning properly when adequate vegetation, large woody debris, or rock is present to dissipate stream energy associated with high water flows. Elements indicating proper functioning condition such as avoiding accelerating erosion,

capturing sediment, and providing for groundwater recharge and release are determined by the following measurements as appropriate to the site characteristics:

Width/Depth ratio;  
Channel roughness;  
Sinuosity of stream channel;  
Bank stability;  
Vegetative cover (amount, spacing, life form); and  
Other cover (large woody debris, rock).

- Natural springs, seeps, and marsh areas are functioning properly when adequate vegetation is present to facilitate water retention, filtering, and release as indicated by plant species and cover appropriate to the site characteristics.
- Chemical, physical and biological constituents do not exceed the state water quality standards.

Determination:

- |                                     |   |
|-------------------------------------|---|
| <input type="checkbox"/>            | Achieving the Standard  |
| <input checked="" type="checkbox"/> | Not Achieving the Standard, but making significant progress towards achieving   |
| <input type="checkbox"/>            | Not Achieving the Standard, and not making significant progress toward standard |

Causal Factors:

- |                                     |   |
|-------------------------------------|---|
| <input checked="" type="checkbox"/> | Livestock are a contributing factor to not achieving the standard     |
| <input type="checkbox"/>            | Livestock are not a contributing factor to not achieving the standard |
| <input checked="" type="checkbox"/> | Failure to meet the standard is related to other issues or conditions |

Guidelines Conformance:

- |                                     |  |
|-------------------------------------|--|
| <input checked="" type="checkbox"/> | In conformance with the Guidelines     |
| <input type="checkbox"/>            | Not in conformance with the Guidelines |

Conclusion:

Monitoring data, field observations, and photo documentation indicate that most riparian areas on the Railroad Pass Allotment are able to dissipate energy associated with high water flows. Riparian areas were assessed using the Proper Functioning Condition (PFC) method.

Four spring fed riparian areas are known to exist on the Railroad Pass Allotment. Dora Spring has been dug out to create a small area of surface water that supports a sedge/rush plant community. This spring has been developed and piped for stockwater uses. This riparian area was found to be functioning at risk with a downward trend in 2010. Majority of the banks have been disturbed and are supporting limited vegetation.

Portuguese Spring has been dug out at the source to create a small pond area that does not support a riparian area, however the outflow from the pond creates a small, herbaceous riparian area. This area was found to be in proper functioning condition in 2010, however it is dependant upon the pond outflow for its existence. Trampling by large herbivores was also identified as a risk factor for this riparian area.

An unnamed spring (T25N R55E Sec. 20) supports a lotic riparian area with a shrub/grass plant community. This area was found to be in proper functioning condition in 2010. Drought and lack of flow were identified as risk factors for this area.

An unnamed spring complex (T24N R55E Sec. 8) supports a wet meadow, riparian area. This area was found to be in proper functioning condition in 2010. Dense and lush sedge/rush mats were observed at this area.

Water quality data has not been collected on the Railroad Pass Allotment, however no water quality problems are known to exist.

Overall, most of the riparian areas on the Railroad Pass Allotment are functioning properly to dissipate high flow energy. However, Dora Spring riparian area is at risk for accelerated erosion during a high flow event. Due to the inadequate bank cover at Dora Spring, the Railroad Pass Allotment is not meeting the Riparian and Wetland Sites Standard, however the allotment is progressing towards this standard. Bank trampling by large herbivores, including cattle and wild horses, is causing these conditions at Dora Spring.

### **Standard 3. Habitat**

*Habitats exhibit a healthy, productive, and diverse population of native and/or desirable plant species, appropriate to the site characteristics, to provide suitable feed, water, cover and living space for animal species and maintain ecological processes. Habitat conditions meet the life cycle requirements of threatened and endangered species.*

As indicated by:

- Vegetation composition (relative abundance of species);
- Vegetation structure (life forms, cover, height, and age class);
- Vegetation distribution (patchiness, corridors);
- Vegetation productivity; and
- Vegetation nutritional value.

#### Determination:

- |                                     |   |
|-------------------------------------|---|
| <input type="checkbox"/>            | Achieving the Standard  |
| <input checked="" type="checkbox"/> | Not Achieving the Standard, but making significant progress towards achieving   |
| <input type="checkbox"/>            | Not Achieving the Standard, and not making significant progress toward standard |

#### Causal Factors:

- |                                     |   |
|-------------------------------------|---|
| <input type="checkbox"/>            | Livestock are a contributing factor to not achieving the standard     |
| <input checked="" type="checkbox"/> | Livestock are not a contributing factor to not achieving the standard |
| <input checked="" type="checkbox"/> | Failure to meet the standard is related to other issues or conditions |

#### Guidelines Conformance:

- |                                     |  |
|-------------------------------------|--|
| <input checked="" type="checkbox"/> | In conformance with the Guidelines     |
| <input type="checkbox"/>            | Not in conformance with the Guidelines |

Threatened and Endangered Species: None known within or near the Railroad Pass Allotment.

#### BLM Sensitive Species:

Greater Sage-Grouse—The Railroad Pass Allotment lies within the South Fork Sage-Grouse Population Management Unit (PMU), the Butte Valley/Buck Mountain/White Pine Range PMU, and the Diamond PMU. No sage-grouse leks are known to occur within the allotment, but three

leks occur less than two miles from the southeast allotment boundary. Much of the allotment has been identified as nesting, summer (brood-rearing), and winter habitat for the birds.

Sage-grouse often nest in suitable habitat within three miles of a lek site. The sage-grouse breeding and nesting period is generally considered to be approximately March 15 through May 31. The brood-rearing period is generally considered to be June 1 through October 31. The wintering period is generally considered to be November 1 through March 14.

Connelly et al. (2000) sets forth guidelines for productive sage-grouse habitat in what is commonly known as the “Connelly Guidelines.” Guidelines applicable to the sage-grouse habitats found on the Railroad Pass Allotment are summarized in Table 4, “Characteristics of sagebrush rangeland needed for productive sage-grouse habitat (Connelly 2000)” (p. 9).

**Table 4. Characteristics of sagebrush rangeland needed for productive sage-grouse habitat (Connelly 2000)**

	Breeding		Brood-rearing		Winter (exposed above snow)	
	Height (inches)	Canopy Cover (%)	Height (inches)	Canopy Cover (%)	Height (inches)	Canopy Cover (%)
Sagebrush	11–32	15–25	16–32	10–25	10–14	10–30
Grass/Forb	>7	>15	variable	>15	N/A	N/A
% seasonal habitat needed with these conditions	>80%		>40%		>80%	

When compared to sage-grouse habitat monitoring data collected on the Railroad Pass Allotment (Table 9, “Sage-Grouse Habitat Data on the Railroad Pass Allotment, 2010” (p. 24)), these guidelines are generally not being met due to high sagebrush cover and short plant heights.

**Pygmy Rabbit**—There is a single documented occurrence of pygmy rabbit within the Railroad Pass Allotment, and there are likely additional populations throughout suitable habitat within the allotment. The species prefers areas of tall sagebrush with deep friable soils for digging burrows. Little is known about the current condition of this habitat, however there are no known reasons for concern.

**Raptors**—No recently active raptor nests have been identified within the Railroad Pass Allotment. There are two documented historical golden eagle (*Aquila chrysaetos*) nests, and there is suitable nesting and foraging habitat within the allotment for western burrowing owl (*Athene cunicularia hypugaea*) and short-eared owl (*Asio flammeus*), as well as foraging habitat for prairie falcon (*Falco mexicanus*) and American kestrel (*F. sparverius*). Raptor use of the area for foraging during spring and fall migrations as well as by over-wintering individuals would be expected.

**Other**—Given known habitat associations and current conditions, other state or BLM listed Sensitive or Special Status Species are likely to be present within the Railroad Pass Allotment. Such species may occur as transients or indigenous populations, including, but not limited to loggerhead shrike (*Lanius ludovicianus*), vesper sparrow (*Pooecetes gramineus*), Lewis’s woodpecker (*Melanerpes lewis*), greater sandhill crane (*Grus canadensis tabida*), and multiple small mammal species including bats and rodents.

## Conclusion:

Monitoring data, field observations, and photo documentation indicate that vegetative composition, structure, distribution, and productivity vary across the Railroad Pass Allotment with large portions being appropriate to the potential of the site. Site potential was determined from ESDs and general knowledge of local ecosystems. In some areas, vegetation composition and productivity are not as expected.

Key area RR-1 occurs on a Russian wildrye and crested wheatgrass seeding. The vegetative composition by weight measured at this site in 2010 was 62 percent grasses, 15 percent forbs, and 24 percent shrubs. Vegetative data from 2008 show a similar composition. The total annual production was measured at 610 pounds per acre in 2010 and 193 pounds per acre in 2008.

Key area RR-3 occurs on a Russian wildrye and crested wheatgrass seeding. The vegetative composition by weight measured at this site in 2010 was 57 percent grasses and 45 percent forbs. Vegetative data from 2008 show an all grass composition. The total annual production was measured at 563 pounds per acre in 2010 and 60 pounds per acre in 2008.

Key area RR-4 occurs on a Loamy Fan (025XY070NV) ecological site. The expected vegetative composition by weight for this ecological site is 60 percent grasses, 5 percent forbs, and 35 percent shrubs. Composition by weight measured at RR-4 in 2010 was 9 percent grasses, 1 percent forbs, and 90 percent shrubs. Vegetative data from 2008 show a similar composition. Total annual production expected for this ecological site is 1,000 pounds per acre on a favorable year, 800 pounds per acre on a normal year, and 600 pounds per acre on an unfavorable year. The total annual production was measured at 2,945 pounds per acre in 2010 and 261 pounds per acre in 2008. Similarity index for this key area was calculated to be 34 percent in 2010 and 45 percent in 2008.

Key area RR-5 occurs on a crested wheatgrass seeding. The vegetative composition by weight measured at this site in 2010 was 98 percent grasses and 2 percent forbs. Vegetative data from 2008 show a similar composition. The total annual production was measured at 2,240 pounds per acre in 2010 and 448 pounds per acre in 2008.

Key area RR-6 occurs on a Loamy (028BY030NV) ecological site. The expected vegetative composition by weight for this ecological site is 55 percent grasses, 10 percent forbs, and 35 percent shrubs and trees. Composition by weight measured at RR-6 in 2010 was 7 percent grasses, 8 percent forbs, and 84 percent shrubs. Vegetative data from 2008 show a similar composition. Total annual production expected for this ecological site is 1,500 pounds per acre on a favorable year, 1,200 pounds per acre on a normal year, and 900 pounds per acre on an unfavorable year. The total annual production was measured at 1,271 pounds per acre in 2010 and 1,274 pounds per acre in 2008. Similarity index for this key area was calculated to be 39 percent in 2010 and 34 percent in 2008.

Key area RR-7 occurs on a crested wheatgrass seeding. The vegetative composition by weight measured at this site in 2010 was 100 percent grasses with a trace amount of forbs. Vegetative data from 2008 show a similar composition. The total annual production was measured at 1,546 pounds per acre in 2010 and 810 pounds per acre in 2008.

Key area RR-8 occurs on a Loamy (028BY030NV) ecological site. The expected vegetative composition by weight for this ecological site is 55 percent grasses, 10 percent forbs, and 35 percent shrubs and trees. Composition by weight measured at RR-8 in 2010 was 14 percent



grasses, 16 percent forbs, and 72 percent shrubs. Total annual production expected for this ecological site is 1,500 pounds per acre on a favorable year, 1,200 pounds per acre on a normal year, and 900 pounds per acre on an unfavorable year. The total annual production was measured at 1,266 pounds per acre in 2010. Similarity index for this key area was calculated to be 51 percent.

This key area analysis indicates that plant communities represented by RR-4, RR-6, and RR-8 are transitioning towards a shrub dominate state. As this transition occurs, these plant communities may no longer be accurately represented by the respective ecological site description. Currently, these key areas are supporting the major vegetative species expected, however they are occurring at a differing proportion. Conversely, the plant communities represented by RR-1 and RR-3 have a vegetative composition with a strong herbaceous component. These areas were burned in the natural fire cycle of the area which reduced the shrub component. Therefore, it is likely that lack of wildfire in other areas of the Railroad Pass Allotment is causing the trend toward shrub dominance.

Vegetative production across the Railroad Pass Allotment varies based largely on annual precipitation. In 2008, annual rainfall was well below average, while in 2010, annual rainfall was above average. This is reflected in the difference in annual production data collected at key areas across the allotment. The range of vegetative production measured across the allotment is largely as expected. Production at RR-1 and RR-3 is on the lower end of the expected range. This is due to the heavy and severe utilization that has occurred in this area from combined large herbivore use, including wild horses, livestock, and wildlife. This high level of utilization has been measured both during years of cattle use and on years of complete rest from cattle grazing. Sheep use has been measured as light in this area. Therefore, livestock use is not a contributing factor to the lower production of this area.

The variety of plant communities present across the allotment are indicative of proper vegetation distribution for the size and location of the Railroad Pass Allotment. This allotment reaches from the Huntington Valley bottom through the foothills and to the top of the Diamond Range. The varying elevations and rolling topography of the land area facilitate this distribution. Additional patchiness is created from the natural fire history of the area.

Large portions of the Railroad Pass Allotment vegetative composition, structure, distribution, and productivity are as expected. There are areas of shrub dominance and areas of low productivity found on the allotment. Special status species habitats are also threatened by these conditions. Due to areas of shrub dominance and areas of low productivity, the Railroad Pass Allotment is not meeting the Habitat Standard, however the allotment is progressing towards this standard. Livestock grazing is not a contributing factor to the non-attainment of this standard.

## **PART 2. ARE LIVESTOCK A CONTRIBUTING FACTOR TO NOT MEETING THE STANDARDS? SUMMARY REVIEW:**

According to the Standards and Guidelines for Nevada's Northeastern Great Basin Area, it must be determined if livestock grazing is a significant factor in the non-attainment of the Standards and Guidelines (BLM 1997).

### **Standard #1: Upland Sites**

The Upland Sites Standard is being achieved on the Railroad Pass Allotment.

### **Standard #2: Riparian and Wetland Sites**

The Riparian and Wetland Sites Standard is not being met on the Railroad Pass Allotment due to inadequate bank cover at Dora Spring. Bank trampling by large herbivores, including cattle, is causing these conditions at Dora Spring. Other contributing factors are bank trampling by wild horses and water development of the spring source. The current grazing management practices of lowered livestock numbers and a rotational grazing system work to improve the situation at Dora Spring, however grazing management alone will not correct this problem.

### **Standard #3: Habitat**

The Habitat Standard is not being achieved on the Railroad Pass Allotment due to areas of shrub dominance and areas of low productivity. Shrub dominance is only occurring in areas that have no fire history. Portions of the allotment that have been burned in the past show a strong herbaceous understory. Therefore, lack of fire is causing shrub dominance and natural fire cycles should be allowed to occur. The areas of low productivity are being caused by heavy and severe utilization. This level of utilization has occurred on years of complete rest from cattle grazing and sheep use in the area has been measured as light. Therefore, livestock use is not a contributing factor to the area of lower production. Other contributing factors are wild horse use and past drought-like conditions.

## **PART 3. GUIDELINE CONFORMANCE REVIEW AND SUMMARY**

Current grazing use is in conformance with all applicable Guidelines as provided in Nevada's Northeastern Great Basin Standards and Guidelines on the Railroad Pass Allotment.

## **PART 4. MANAGEMENT PRACTICES TO CONFORM WITH GUIDELINES AND ACHIEVE STANDARDS**

### **Management Recommendations:**

1. Continue rangeland monitoring of the Railroad Pass Allotment for livestock in compliance with proper allowable use levels and vegetative conditions.
2. Fencing of the Dora Spring riparian area is recommended to improve riparian functionality and allow continued progression towards the Riparian and Wetland Standard.
3. Allow moderate sized wildfires to burn in the higher elevation or conduct prescribed burns to mimic natural burn cycles of the area to allow continued progression towards the Habitat Standard.
4. Consider a brush mowing project in lower elevation, brush dominated sites with desirable understory species present (sites represented by RR-4) to prevent complete shrub dominance and allow continued progression towards the Habitat Standard.
5. Continue to implement current wild horse management plans and appropriate management levels.
6. Continue the current Livestock Grazing Agreement which calls for the voluntary non-use of 947 cattle AUMs (211 for 2704520 and 736 for 2704502) and outlines a rest-rotation grazing system as follows:  
  
Year 1 (2011, 2013, 2015, 2017, etc.) – North of drift fence  
Year 2 (2012, 2014, 2016, 2018, etc.) – South of drift fence
7. The total grazing preferences are recommended to remain:
  - a. 1,800 AUMs for 2704502
  - b. 511 AUMs for 2704520
  - c. 1,231 AUMs for 2703638
8. Cattle grazing is recommended to continue and the season of use is recommended to be:
  - a. 05/01 to 10/31 for cattle use on native range (2704502 and 2704520)
  - b. 04/05 to 11/15 for sheep use on native range (2703638)
  - c. 04/05 to 11/15 for sheep or cattle use on Corta Seeding (2703638)

All livestock operators on the Railroad Pass Allotment use this area in conjunction with other grazing allotments. Flexibility in livestock numbers, not to exceed active AUMs, will be allowed within identified grazing periods to allow for flexibility in the overall grazing operations.

The season of use for cattle use on native range is being extended one month earlier and one month later to allow for greater flexibility in the overall cattle operations.

Additionally, during the hottest part of the year, cattle distribute poorly on the Railroad Pass Allotment staying close to water sources. When temperatures are cooler, cattle will move further from water sources and use forage more evenly across the allotment. This extended cattle grazing season of use will allow use earlier or later when temperatures are more moderate.

9. Maximum utilization levels on the Railroad Pass Allotment are recommended to remain as follows:
  - a. Perennial native grasses: 50% of current year's growth
  - b. Perennial non-native seedings: 65% of current year's growth
  - c. Perennial shrubs and half-shrubs: 50% use on current annual production
  - d. Livestock will be moved to another authorized pasture or removed from the allotment before utilization objectives are met or no later than 5 days after meeting the utilization objectives. Any deviation in livestock movement will require authorization from the authorized officer.
10. Continue summer sheep grazing only in the higher elevation of the Railroad Pass Allotment.

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## Appendix A—Data Summary

### Key Areas and Ecological Sites

A key area is a relatively small portion of a pasture or allotment selected because of its location, use, or grazing value as a monitoring point for grazing use. It is assumed that key areas, if properly selected, will reflect the current grazing management over the pasture or allotment as a whole (NRCS 1997). Key areas represent range conditions, trends, seasonal degrees of use, and resource production and values. Table 5, “Railroad Pass Allotment Key Areas” (p. ) depicts key areas and their location within the Railroad Pass Allotment as well as the ecological site associated with the key area and soil mapping unit of each site (*Appendix B—Maps* (p. ), Figure 3, “Railroad Pass Allotment Key Area Map” (p. ), Figure 8, “Railroad Pass Allotment, Soils Map” (p. )). These key areas occur within the Soil Survey of Western White Pine County Area, Nevada (NV780; NRCS 1998).

An ecological site is a distinctive kind of land with specific physical characteristics that differs from other kinds of land in its ability to produce a distinctive kind and amount of vegetation (NRCS 1997). Ecological Site Descriptions (ESD) are used for inventory, evaluation, and management of native vegetation communities. The ecological site of a key area is determined based on several factors including soils, topography, and plant community.

**Table 5. Railroad Pass Allotment Key Areas**

Key Area	Pasture	Location	Ecological Site	Dominate Species from ESD	Soil Mapping Unit
RR-1	North (Big Burn)	T26N R55E Sec. 32 SE1/4 SW1/4	—	—	414–Cassiro-Belmill association
RR-2	North (Big Burn)	T29N R55E Sec.32 SW1/4	**This site has not been located since 2002		
RR-3	North (Small Burn)	T25N R55E Sec. 9 SW1/4 SW1/4	—	—	289–Palinor-Shabliss association
RR-4	South	T24N R55E Sec. 3 SW1/4 SE1/4	Loamy Fan 8–10” P.Z. (025XY070NV)	big sagebrush, basin wildrye, and thickspike wheatgrass	1090–Fax-Hunnton-Cassiro association
RR-5	Corta Seeding	T25N R55E Sec. 21 NW1/4 SE1/4	—	—	414–Cassiro-Belmill association
RR-6	South	T24N R55E Sec. 5 SW1/4 SW1/4	Loamy 12–16” P.Z. (028BY030NV)	mountain big sagebrush and bluebunch wheatgrass	1090–Fax-Hunnton-Cassiro association

Key Area	Pasture	Location	Ecological Site	Dominate Species from ESD	Soil Mapping Unit
RR-7	Corta Seeding	T25N R55E Sec. 21 SE1/4	—	—	414–Cassiro-Bellmill association
RR-8	South	T24N R55E Sec. 5 NE1/4 SW1/4	Loamy 12–16” P.Z. (028BY030NV)	mountain big sagebrush and bluebunch wheatgrass	500–Segura-McIvey-Hutchley association

## Licensed Livestock Use

Over the grazing seasons from 2001 to 2010, livestock permitted use on the Railroad Pass Allotment was 1,064 AUMs in a cattle operation for 2704502, 1,231 AUMs in a sheep operation for 2704538, and 300 AUMs in a cattle operation for 2704520/2704555. The grazing preference for 2704555 was transferred to 2704520 in 2010 and the grazing preference for 270538 was transferred to 2703638 in 2011. ??? (p. ) summarizes the licensed use data for this time period. Cattle use was rotated between the North and South Pastures with use in the North Pasture in odd numbered years and use in the South Pasture in even numbered years.

Annual variation in livestock use has occurred for several reasons including various business decisions of the permittees, competition with wild horses and other permittees, and annual forage availability.

**Table 6. Railroad Pass Allotment Licensed Use Summary**

Grazing Year	2704502		2703638/2704538		2704520/2704555	
	Licensed Use (AUMs)	% Licensed Use of Permitted Use	Licensed Use (AUMs)	% Licensed Use of Permitted Use	Licensed Use (AUMs)	% Licensed Use of Permitted Use
2001	1063	100%	976	79%	409	136%
2002	473	44%	716	58%	321	107%
2003	408	38%	596	48%	214	71%
2004	679	64%	530	43%	0	0%
2005	217	20%	558	45%	0	0%
2006	900	85%	992	81%	0	0%
2007	662	62%	615	50%	154	51%
2008	523	49%	859	70%	0	0%
2009	0	0%	764	62%	0	0%
2010	411	39%	727	59%	0	0%

## Utilization

Utilization is the estimation of the proportion of annual production consumed or destroyed by animals (Swanson et. al. 2006). The general utilization objective for all allotments in the Ely BLM District according to the Ely District Record of Decision and Approved Resource Management Plan (ROD/RMP; 2008) is to “Manage livestock grazing on public lands to provide for a level of livestock grazing consistent with multiple use, sustained yield, and watershed function and health” (Ely RMP, p. 85). The Nevada Rangeland Monitoring Handbook gives guidelines to determine the proper use levels by plant category (grasses, forbs, and shrubs) and by grazing season (spring,

summer, fall, winter, yearlong). Proper use levels for all allotments are also implied by the Standards and Guidelines for Rangeland Health and Grazing Administration (1997).

Key Species Method (Cooperative Extension Service et. al. 1996) was used to collect utilization data on the Railroad Pass Allotment. This data was generally collected at key areas but other data collection sites have been used. Table 7, “Utilization Data Summary, Railroad Pass” (p. ) summarizes utilization data collected since 2000. Utilization is for all herbivores (cattle, sheep, wild horses, wildlife, etc.)

**Table 7. Utilization Data Summary, Railroad Pass**

Date Collected	Location	Vegetation Species	Utilization Class <sup>a</sup>	Measured Utilization	Notes
5/18/2010	RR-1	crested wheatgrass	light	33%	measuring sheep use; prior to cattle use; sheep camp nearby
9/15/2009	RR-1	crested wheatgrass	heavy	75%	appears to be heavy wild horse use
7/30/2008	RR-1	crested wheatgrass	moderate	42%	
		Russian wildrye	light	28%	
7/30/2008	0.6 mile from Burn Spr.	ryegrass	slight	15%	
11/20/2007	RR-1	crested wheatgrass	severe	86%	
11/20/2007	~0.4 mile south of RR-1	crested wheatgrass	heavy	68%	
11/20/2007	Little Burn	crested wheatgrass	severe	81%	mostly wild horse use in Little Burn
8/11/2006	RR-1	crested wheatgrass	severe	88%	
8/11/2006	0.5 mile south of fork to Burn Spr.	crested wheatgrass	severe	84%	cattle and wild horse use
		basin wildrye	light	29%	
8/11/2006	old burn	basin wildrye	slight	16%	Mormon crickets
10/8/2002	RR-1	crested wheatgrass	moderate	46%	mostly wild horse use
10/8/2002	RR-2	crested wheatgrass	moderate	50%	heavy wild horse use
5/18/2010	RR-3	crested wheatgrass	negligible	5%	prior to cattle use
9/15/2009	RR-3	crested wheatgrass	heavy	64%	appears to be heavy wild horse use
8/11/2006	RR-03	crested wheatgrass	severe	86%	
8/11/2006	north of Corta Sdg	Indian ricegrass	moderate	50%	
5/18/2010	RR-4	bluegrass	negligible	3%	prior to cattle use
		basin wildrye	negligible	3%	
9/15/2009	RR-4	squirreltail	negligible	8%	

Date Collected	Location	Vegetation Species	Utilization Class <sup>a</sup>	Measured Utilization	Notes
7/14/2008	RR-4	basin wildrye	light	35%	
		squirrel tail	negligible	2%	
11/21/2007	RR-4	needleandthread	light	27%	
		bluegrass	light	21%	
		basin wildrye	light	29%	
11/21/2007	near south allot. boundary	Indian ricegrass	moderate	59%	Indian ricegrass droughty
		basin wildrye	light	29%	
11/21/2007	near south allot. boundary	Indian ricegrass	moderate	54%	
		basin wildrye	moderate	42%	
9/15/2009	RR-5	crested wheatgrass	negligible	3%	
11/20/2007	RR-5	crested wheatgrass	light	26%	
11/20/2007	Corta Sdg	crested wheatgrass	light	24%	
8/29/2006	RR-5	crested wheatgrass	heavy	72%	
5/18/2010	RR-06	bluegrass	slight	15%	prior to cattle use
9/15/2009	RR-6	bluebunch wheatgrass	negligible	3%	
		squirreltail	negligible	3%	
7/14/2008	RR-6	squirreltail	negligible	2%	
		bluebunch wheatgrass	slight	16%	
		basin wildrye	light	38%	
		bitterbrush	light	27%	
11/20/2007	RR-6	bluebunch wheatgrass	light	22%	
		bitterbrush	slight	11%	
		bluegrass	slight	12%	
8/29/2006	RR-6	bluebunch wheatgrass	light	40%	
		basin wildrye	light	36%	
		bluegrass	heavy	64%	
8/29/2006	0.8 mile east of RR-6	basin wildrye	light	35%	
		squirreltail	heavy	72%	
9/15/2009	RR-7	crested wheatgrass	negligible	3%	
11/20/2007	RR-7	crested wheatgrass	moderate	48%	
8/29/2006	RR-7	crested wheatgrass	heavy	64%	
6/30/2010	RR-8	bluebunch wheatgrass	slight	12%	
		bluegrass	slight	8%	
7/30/2008	above Dora Spr.	riparian grasses	light	22%	

Date Collected	Location	Vegetation Species	Utilization Class <sup>a</sup>	Measured Utilization	Notes
7/30/2008	below Dora Spr.	riparian grasses	moderate	44%	
11/21/2007	South Pasture	bluegrass	moderate	54%	
		basin wildrye	slight	20%	
11/21/2007	near spring on south fenceline	grasses (salt grass, bluegrass)	heavy	72%	primarily cattle use
11/20/2007	0.4 mile east of RR-6	basin wildrye	slight	20%	
		bluebunch wheatgrass	slight	14%	
8/29/2006	Portuguese Spr.	sedges	severe	84%	
8/29/2006	near south fenceline	basin wildrye	moderate	46%	
		squirreltail	severe	84%	
		Indian ricegrass	severe	82%	
8/11/2006	Corta Sdg	crested wheatgrass	heavy	78%	cattle removed today
10/8/2002	Corta Sdg	crested wheatgrass	heavy	78%	

<sup>a</sup>negligible = 0–5%; slight = 6–20%; light = 21–40%; moderate = 41–60%; heavy = 61–80%; severe = 81–94%; extreme = 95–100%

## Line-Point Intercept Cover Studies

Line-point intercept is a rapid, accurate method for quantifying soil cover, including vegetation, litter, rocks and biotic crusts. These measurements are related to wind and water erosion, water infiltration and the ability of the site to resist and recover from degradation (Herrick et al 2005). The results from this cover study are compared to the appropriate vegetative cover for each ecological site as indicated by the Natural Resources Conservation Service (NRCS) Rangeland Ecological Site Descriptions (ESD).

Line-point intercept cover studies were conducted in 2010 at seven key areas on the Railroad Pass Allotment. Additionally, three random data collection points within sage-grouse habitat had line-point intercept cover data collected in 2010. This data is all summarized in Table 8, “Railroad Pass Allotment Ground Cover 2010” (p. ).

**Table 8. Railroad Pass Allotment Ground Cover 2010**

Key Area	Bare Ground	Ground Cover				ESD Veg. Cover
		Rock	Bio. Crust	Litter	Veg.	
RR-1	59%	0%	0%	2%	39%	—
RR-3	29%	2%	0%	24%	45%	—
RR-4	26%	0%	0%	26%	48%	20–30%
RR-5	7%	0%	0%	32%	61%	—

Key Area	Bare Ground	Ground Cover				ESD Veg. Cover
		Rock	Bio. Crust	Litter	Veg.	
RR-6	23%	1%	0%	14%	62%	25–35%
RR-7	13%	0%	0%	31%	56%	—
RR-8	11%	5%	0%	15%	69%	25–35%
SG-RR-03	41%	6%	1%	22%	30%	
SG-RR-04	25%	2%	0%	27%	46%	
SG-RR-05	50%	1%	2%	14%	33%	

Sage-grouse habitat monitoring data also used the line-point intercept method to collect information about canopy cover of shrubs and herbaceous understory (Table 9, “Sage-Grouse Habitat Data on the Railroad Pass Allotment, 2010” (p. 24)). Key areas RR-4 and RR-6 were used as sage-grouse habitat monitoring points (SG-RR-01 and SG-RR-02, respectively) along with three random points within sage-grouse habitat. These data were collected in June 2010 which is the end of the sage-grouse nesting period and beginning of the brood-rearing period.

**Table 9. Sage-Grouse Habitat Data on the Railroad Pass Allotment, 2010**

Sage-Grouse Habitat Monitoring Point	Sagebrush		Grass/Forb	
	Canopy Cover	Average Height (inches)	Canopy Cover	Average Height (inches)
SG-RR-01	35%	40	32%	8
SG-RR-02	37%	25	37%	6
SG-RR-03	45%	26	7%	5
SG-RR-04	30%	33	33%	8
SG-RR-05	19%	22	23%	7

## Similarity Index and Ecological Condition

A similarity index is the percentage of a specific vegetation state plant community that is presently on the site (NRCS 1997). Similarity index is usually computed in reference to the potential native vegetation (PNV) and is an expression of how similar the existing plant community is to PNV. Also note that PNV is not always the most desirable plant community to manage for.

Similarity index is calculated as a percent composition by air dry weight. The site is inventoried to determine the current percent composition by weight on an air dry basis. These numbers are then compared to the percent composition by weight on an air dry basis of the PNV in the Rangeland Ecological Site Description for the site. To calculate the similarity index, current composition cannot exceed that of PNV. This yields percent allowable. The sum of all allowable percentages equals the similarity index.

Table 10, “Total Annual Yield and Composition of Key Areas, Railroad Pass Allotment” (p. ) summarizes data used to calculate similarity index for the Railroad Pass Allotment.

**Table 10. Total Annual Yield and Composition of Key Areas, Railroad Pass Allotment**

<b>Key Area:</b> RR-4
<b>Ecological Site:</b> Loamy Fan 8–10” P.Z. (025XY070NV)
<b>Potential Vegetative Composition*:</b> 60% Grasses, 5% Forbs, 35% Shrubs
<b>Total Annual Production (air dry lb/ac)*:</b> 1000 (Favorable), 800 (Normal), 600 (Unfavorable Year)

<b>Date:</b> 07/14/2008				
	<b>Current Production (air dry lb/ac)</b>	<b>Current % Composition by Weight (air dry)</b>	<b>PNV % Composition by Weight (air dry)*</b>	<b>% Allowable</b>
<b>Plant Common Name</b>				
Indian ricegrass	3	1%	5%	1%
bluegrass	35	13%	2–8%	8%
basin wildrye	10	4%	20–40%	4%
squirreldtail	32	12%	5%	5%
phlox	8	3%	2%	2%
big sagebrush	173	66%	15–25%	25%
<b>Total Production:</b>	<b>261</b>		<b>Similarity Index:</b>	<b>45%</b>
<b>Date:</b> 06/17/2010				
	<b>Current Production (air dry lb/ac)</b>	<b>Current % Composition by Weight (air dry)</b>	<b>PNV % Composition by Weight (air dry)*</b>	<b>% Allowable</b>
<b>Plant Common Name</b>				
bluegrass	77	3%	2–8%	3%
squirreldtail	168	6%	5%	5%
phlox	12	trace	2%	—
milkvetch	41	1%	2%	1%
basin big sagebrush	2,647	90%	15–25%	25%
<b>Total Production:</b>	<b>2,945</b>		<b>Similarity Index:</b>	<b>34%</b>
<b>Key Area:</b> RR-6				
<b>Ecological Site:</b> Loamy 12-16" P.Z. (028BY030NV)				
<b>Potential Vegetative Composition*:</b> 55% Grasses, 10% Forbs, 35% Shrubs and Trees				
<b>Total Annual Production (air dry lb/ac)*:</b> 1500 (Favorable), 1200 (Normal), 900 (Unfavorable Year)				
<b>Date:</b> 07/14/2008				
	<b>Current Production (air dry lb/ac)</b>	<b>Current % Composition by Weight (air dry)</b>	<b>PNV % Composition by Weight (air dry)*</b>	<b>% Allowable</b>
<b>Plant Common Name</b>				
bluebunch wheatgrass	1	trace	30–40%	—
bluegrass	26	2%	2%	2%
basin wildrye	2	trace	2–10%	—
squirreldtail	51	4%	2%	2%
mountain big sagebrush	1,112	87%	15–25%	25%
Douglas' rabbitbrush	74	6%	3%	3%
snowberry	8	1%	3%	1%
<b>Total Production:</b>	<b>1,274</b>		<b>Similarity Index:</b>	<b>34%</b>
<b>Date:</b> 06/22/2010				
	<b>Current Production (air dry lb/ac)</b>	<b>Current % Composition by Weight (air dry)</b>	<b>PNV % Composition by Weight (air dry)*</b>	<b>% Allowable</b>
<b>Plant Common Name</b>				
bluegrass	27	2%	2%	2%

squirreltail	64	5%	2%	2%
cheatgrass	1	trace	—	—
milkvetch	14	1%	3%	1%
chickweed	24	2%	3%	2%
lupine	53	4%	3%	3%
other forbs	8	1%	3%	1%
mountain big sagebrush	996	78%	15–25%	25%
Douglas' rabbitbrush	4	trace	3%	—
snowberry	80	6%	3%	3%
<b>Total Production:</b>	<b>1,271</b>		<b>Similarity Index:</b>	<b>39%</b>
<b>Key Area:</b> RR-8				
<b>Ecological Site:</b> Loamy 12–16" P.Z. (28BY030NV)				
<b>Potential Vegetative Composition*:</b> 55% Grasses, 10% Forbs, 35% Shrubs and Trees				
<b>Total Annual Production (air dry lb/ac)*:</b> 1500 (Favorable), 1200 (Normal), 900 (Unfavorable Year)				
<b>Date:</b> 06/30/2010				
<b>Plant Common Name</b>	<b>Current Production (air dry lb/ac)</b>	<b>Current % Composition by Weight (air dry)</b>	<b>PNV % Composition by Weight (air dry)*</b>	<b>% Allowable</b>
bluebunch wheatgrass	113	9%	30–40%	9%
bluegrass	56	4%	2%	2%
cheatgrass	6	1%	—	—
lupine	85	7%	3%**	3%
toadflax	55	4%	3%**	3%
prickly phlox	19	2%	3%**	2%
other forbs	32	3%	3%**	1%
mountain big sagebrush	767	61%	15–25%	25%
snowberry	102	8%	3%	3%
Douglas' rabbitbrush	31	2%	3%	3%
<b>Total Production:</b>	<b>1,266</b>		<b>Similarity Index:</b>	<b>51%</b>
* From Ecological Site Description				
**Allow no more than 3% of each forb species and no more than 15% in aggregate.				

## Current Composition and Production of Seeded Areas

Key areas within the seeded portions of the Railroad Pass Allotment were inventoried to determine the current vegetative production and percent composition by weight on an air dry basis. This was completed using a double sampling technique. Current composition and production data are summarized in Table 11, "Current Composition and Production of Seeded Areas on Railroad Pass Allotment" (p. ).



**Table 11. Current Composition and Production of Seeded Areas on Railroad Pass Allotment**

<b>Key Area</b>	<b>Date Collected</b>	<b>Plant Common Name</b>	<b>Current Production (lbs./ac.; air dry wt.)</b>	<b>Current % Composition by Weight (air dry)</b>
RR-1	07/30/2008	crested wheatgrass	7	4%
		Russian wildrye	79	41%
		bluegrass	14	7%
		Indian ricegrass	12	6%
		squirreldtail	5	3%
		phlox	33	17%
		mustard	18	9%
		Wyoming big sagebrush	25	13%
		<b>TOTAL:</b>	<b>193</b>	
	06/15/2010	crested wheatgrass	322	53%
		Russian wildrye	17	3%
		bluegrass	7	1%
		Indian ricegrass	23	4%
		squirreldtail	3	1%
		phlox	16	3%
		desert madwort	74	12%
		Wyoming big sagebrush	148	24%
		<b>TOTAL:</b>	<b>610</b>	
RR-3	06/23/2008	crested wheatgrass	49	82%
		basin wildrye	11	18%
		<b>TOTAL:</b>	<b>60</b>	
	06/15/2010	crested wheatgrass	262	47%
		basin wildrye	43	8%
		cheatgrass	10	2%
		desert madwort	223	40%
		phlox	25	5%
		<b>TOTAL:</b>	<b>563</b>	
RR-5	06/23/2008	crested wheatgrass	338	75%
		western wheatgrass	28	6%
		bluegrass	12	3%
		cheatgrass	1	trace
		lupine	66	15%
		phlox	3	1%
		<b>TOTAL:</b>	<b>448</b>	
	06/17/2010	crested wheatgrass	2,160	96%
		Russian wildrye	11	1%
		bluegrass	22	1%
		lupine	38	2%
		phlox	6	trace
		milkvetch	3	trace
		<b>TOTAL:</b>	<b>2,240</b>	

Key Area	Date Collected	Plant Common Name	Current Production (lbs./ac.; air dry wt.)	Current % Composition by Weight (air dry)
RR-7	06/23/ 2008	crested wheatgrass	795	98%
		western wheatgrass	15	2%
		<b>TOTAL:</b>	<b>810</b>	
	06/15/ 2010	crested wheatgrass	1468	95%
		basin wildrye	15	1%
		bluegrass	57	4%
		phlox	6	trace
		<b>TOTAL:</b>	<b>1,546</b>	

## Riparian Data

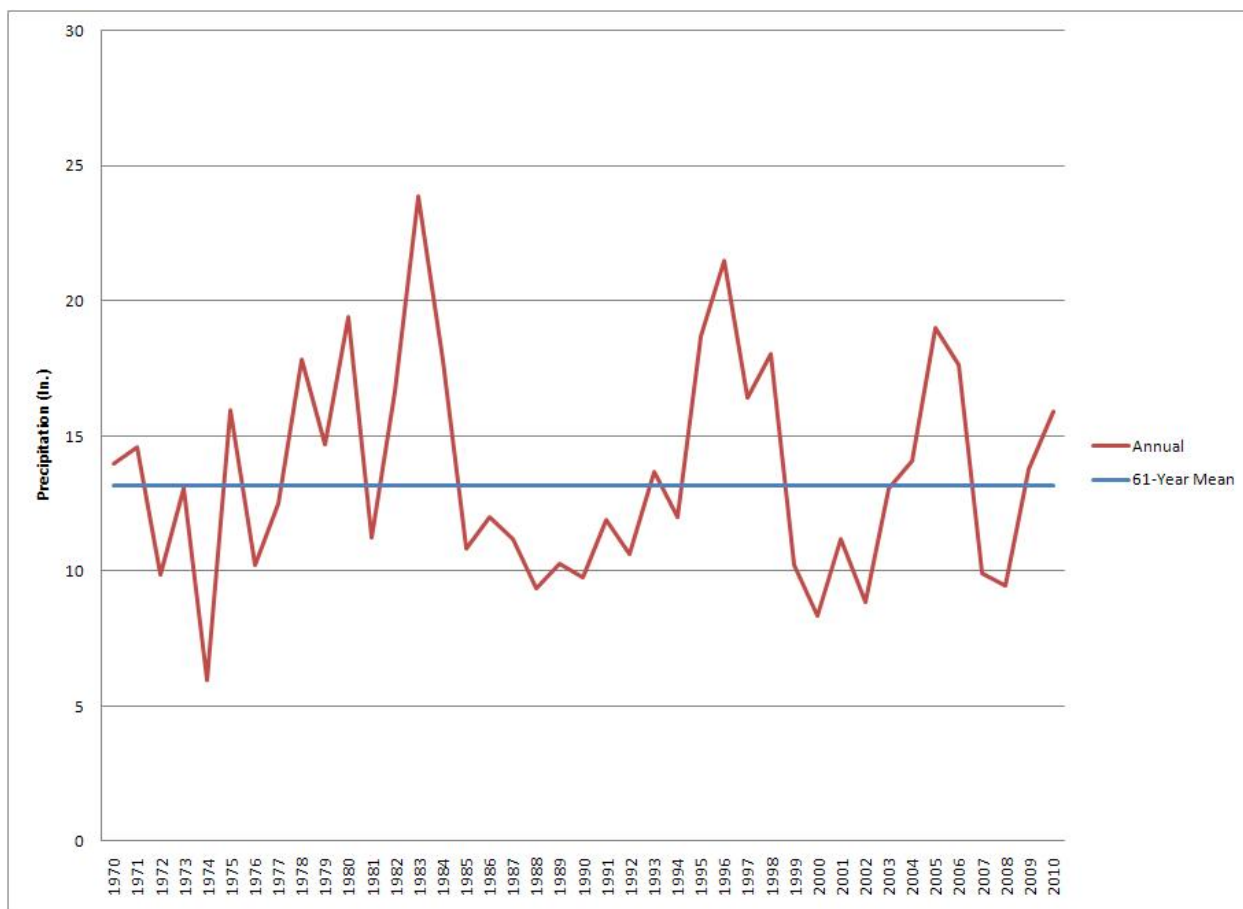
Proper Functioning Condition (PFC) is a qualitative method for assessing the condition of riparian-wetland areas (Prichard 1998, Prichard 2003). The process is completed by an interdisciplinary (ID) team. The team looks at hydrology, vegetation, and erosion/deposition (soil) characteristics of the site in order to assess the condition of a riparian area. Table 12, “Summary of PFC Assessments on the Railroad Pass Allotment” (p. ) summarizes the finding of this team (*Appendix B—Maps* (p. ), Figure 6, “Railroad Pass Allotment, Riparian Areas Map” (p. )).

**Table 12. Summary of PFC Assessments on the Railroad Pass Allotment**

Riparian Area	Date	Functionality (Notes)
Dora Spring	7/15/ 2010	Functioning At-Risk with Downward Trend
Portuguese Spring (below pond)	7/15/ 2010	Proper Functioning Condition (however area is dependant upon pond for existence)
unnamed spring (T25N R55E Sec. 20)	7/15/ 2010	Proper Functioning Condition
unnamed spring (T24N R55E Sec. 8)	7/15/ 2010	Proper Functioning Condition

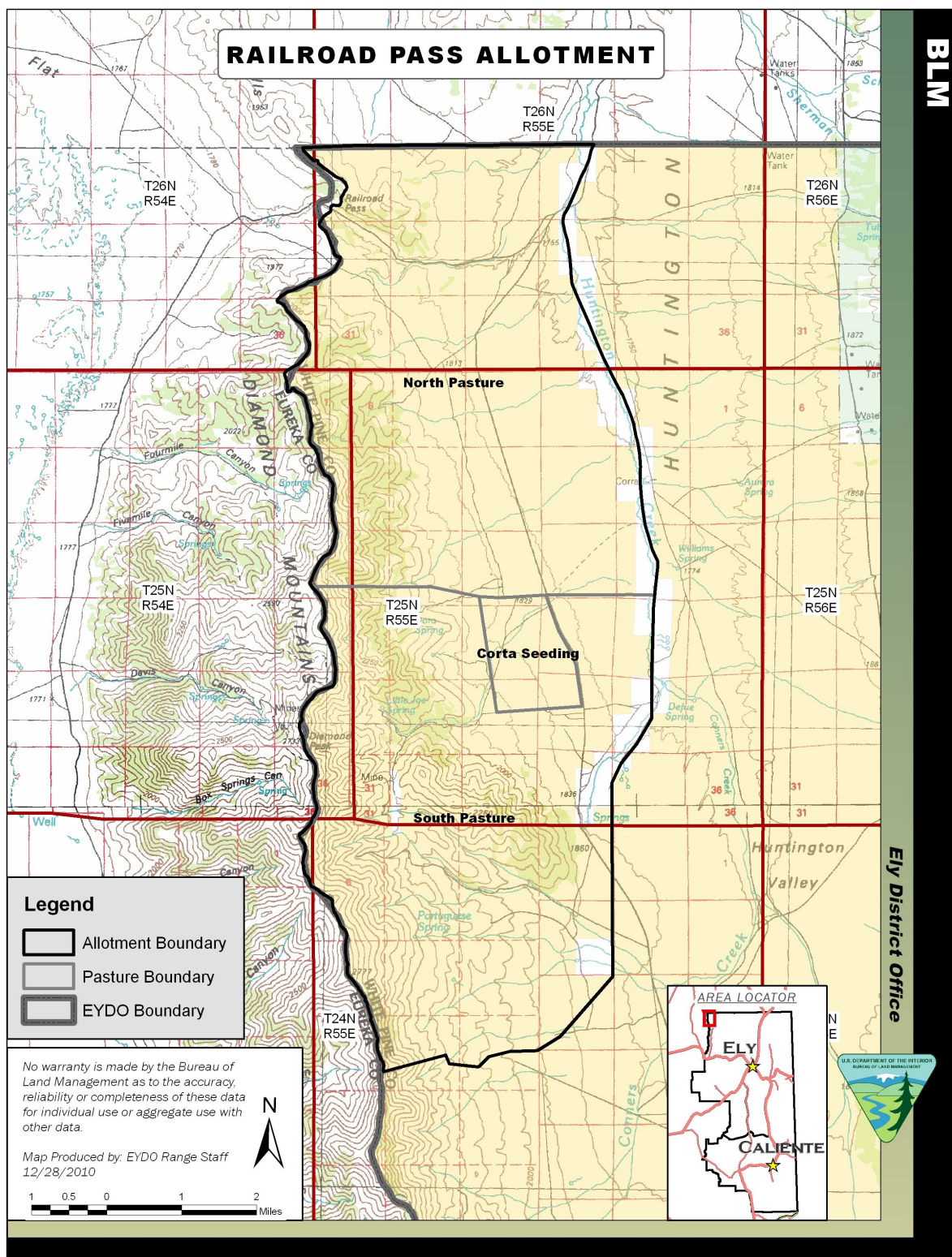
## Precipitation Data

Annual precipitation greatly influences growing condition of forage species and is often correlated to available forage. Historical climate data from the Western Regional Climate Center at the Ruby Lake, Nevada weather station is being used to represent the annual precipitation on the Railroad Pass Allotment (2011). Figure 1, “Precipitation Data (1970–2010) from Western Regional Climate Center, Ruby Lake, NV” (p. ) summarizes annual precipitation data collected since 1970. The 60 year mean annual precipitation for this station is 13.13 inches.



**Figure 1. Precipitation Data (1970–2010) from Western Regional Climate Center, Ruby Lake, NV**

## **Appendix B—Maps**

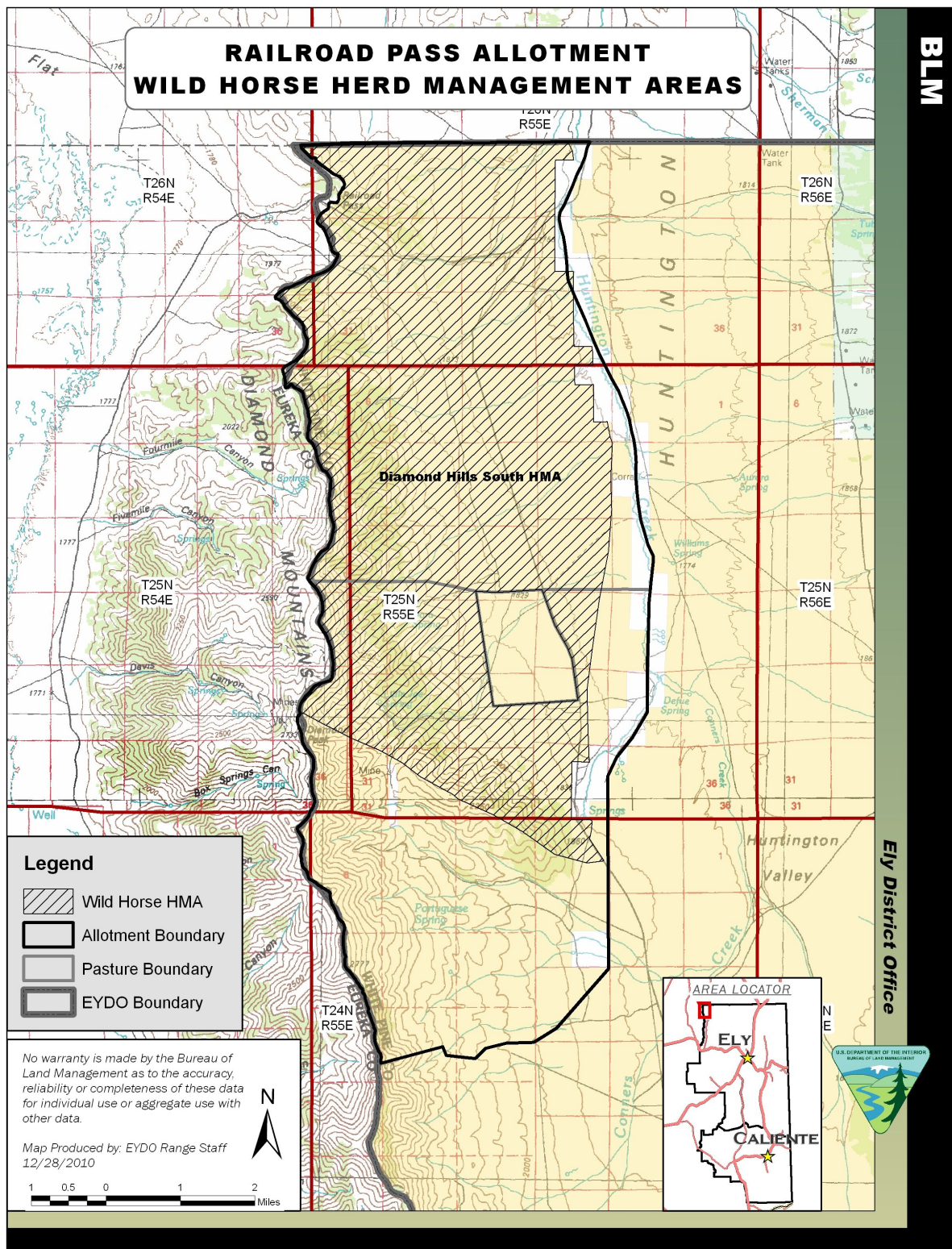


**Figure 2. Railroad Pass Allotment Map**







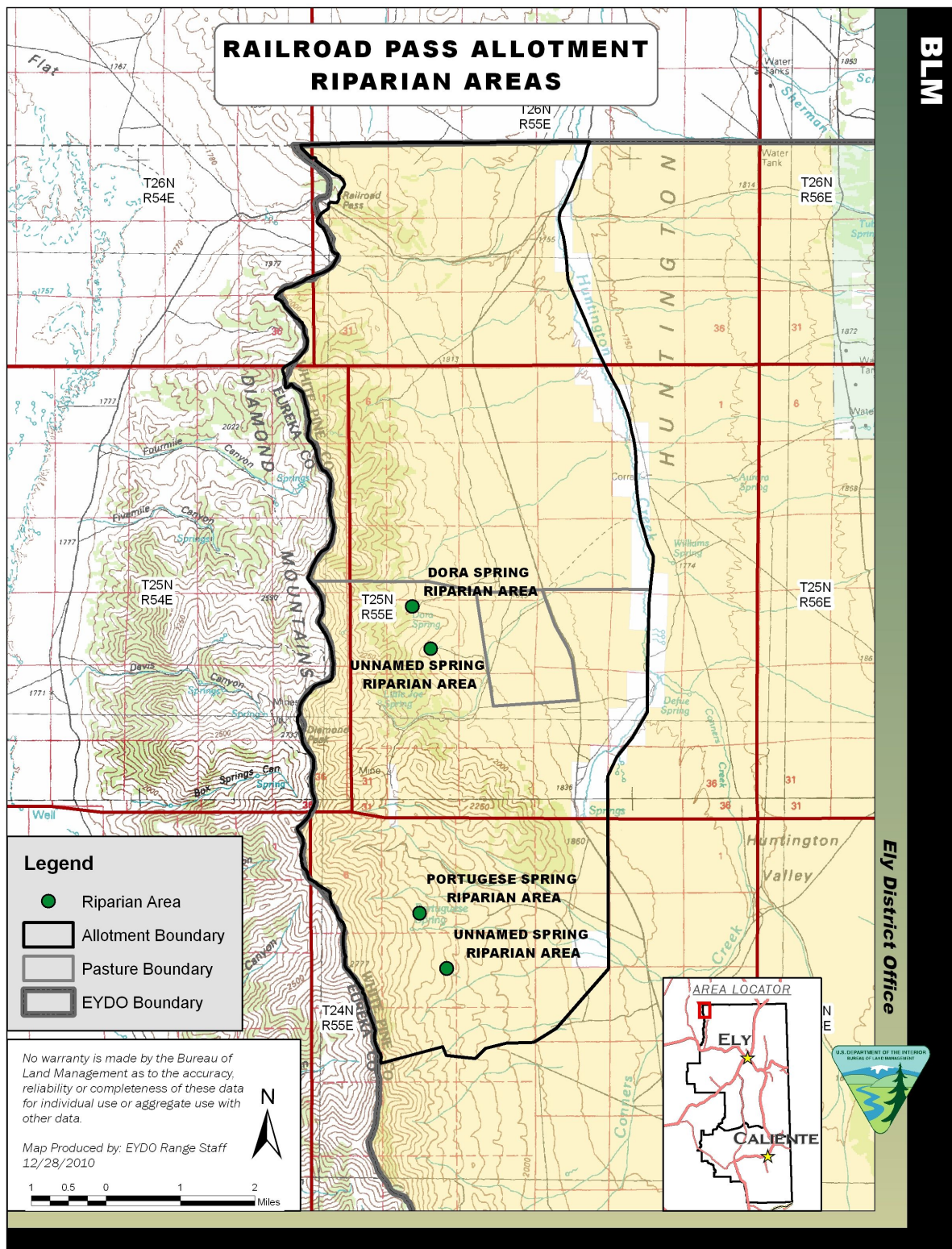


**Figure 4. Railroad Pass Allotment, Diamond Hills South Wild Horse Herd Management**  
 Railroad Pass Allotment Standards Determination  
 Area Map  
 Document



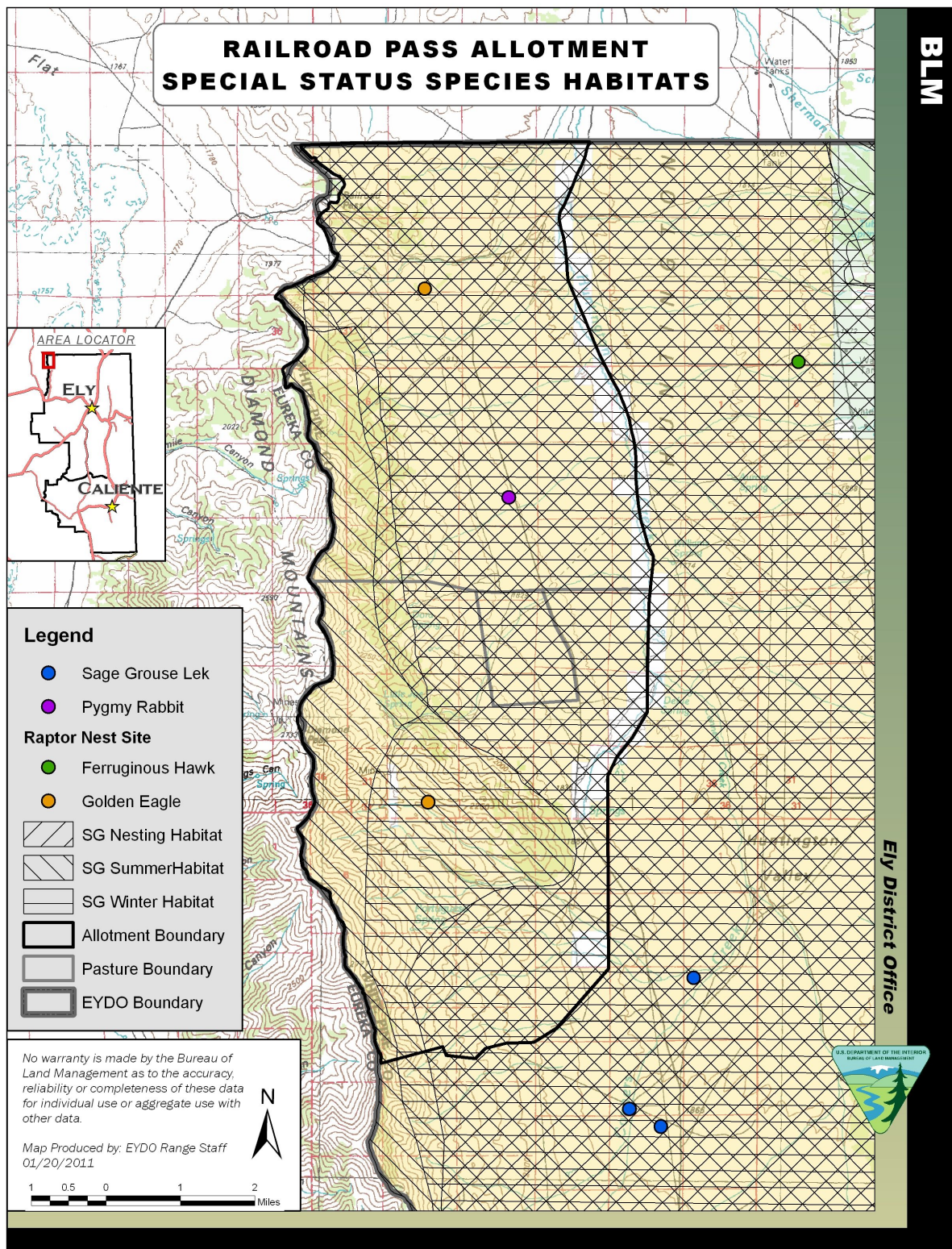




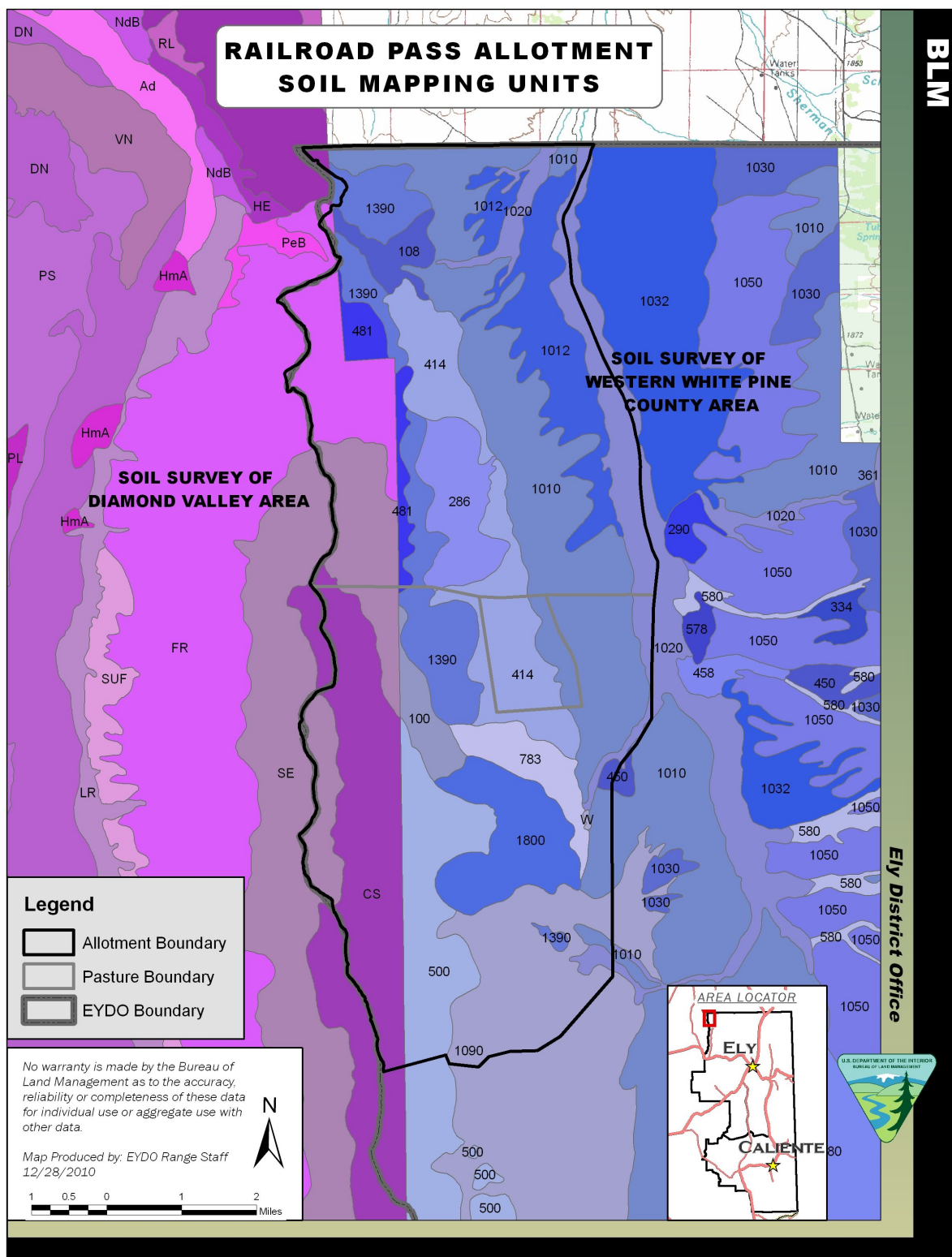


**Figure 6. Railroad Pass Allotment, Riparian Areas Map**  
 Railroad Pass Allotment Standards Determination  
 Document





**Figure 7. Railroad Pass Allotment, Special Status Species Habitat Map**  
 Railroad Pass Allotment Standards Determination  
 Document



**Figure 8. Railroad Pass Allotment, Soils Map**  
 Railroad Pass Allotment Standards Determination  
 Document





## Appendix C—Proposed New Grazing Permits

**Table 13. Proposed New Grazing Permit 2704502 on the Railroad Pass Allotment**

<b>Allotment Name and Number</b>	<b>Livestock Number/ Kind</b>	<b>Grazing Period</b>	<b>% Public Land<sup>a</sup></b>	<b>Type Use</b>	<b>AUMs<sup>b</sup></b>
Railroad Pass 00601	176 Cattle	05/01 to 10/31	100	Active	1065
<b>Allotment AUMs Summary</b>					
<b>Allotment Name</b>	<b>ACTIVE AUMS</b>	<b>SUSPENDED AUMS</b>	<b>VOLUNTARY NON-USE</b>	<b>GRAZING PERMITTED USE</b>	
Railroad Pass	1064	0	736	1800	

<sup>a</sup>% Public Land is the percent of public land for billing purposes.

<sup>b</sup>AUMs may differ from Active Permitted Use due to a rounding difference with the number of livestock and the period of use.

### Other Terms and Conditions:

- The permittee agrees to take voluntary non-use of 736 AUMs of the 1800 AUM grazing preference, therefore only 1064 AUMs of cattle grazing will be authorized during the annual grazing period for the term of this permit.
- Cattle will be grazed in a rest-rotation system as follows:
 

Year 1 (2011, 2013, 2015, 2017, etc.)—North of the drift fence

Year 2 (2012, 2014, 2016, 2018, etc.)—South of the drift fence
- Maximum allowable use levels are as follows:
  - Perennial native grasses: 50% of current year's growth
  - Perennial shrubs and half-shrubs: 50% use on current annual production
  - Perennial, non-native seedlings: 65% of current year's growth
  - Livestock will be moved to another authorized pasture or removed from the allotment before utilization objectives are met or no later than 5 days after meeting the utilization objectives. Any deviation in livestock movement will require authorization from the authorized officer.
- Flexibility in livestock numbers will be allowed, not to exceed the active AUMs. Grazing use will occur within the identified grazing period.

**Table 14. Proposed New Grazing Permit 2704520 on the Railroad Pass Allotment**

<b>Allotment Name and Number</b>	<b>Livestock Number/ Kind</b>	<b>Grazing Period</b>	<b>% Public Land<sup>a</sup></b>	<b>Type Use</b>	<b>AUMs<sup>b</sup></b>
Railroad Pass 00601	50 Cattle	05/01 to 10/31	100	Active	302
<b>Allotment AUMs Summary</b>					
<b>Allotment Name</b>	<b>ACTIVE AUMS</b>	<b>SUSPENDED AUMS</b>	<b>VOLUNTARY NON USE AUMS</b>	<b>GRAZING PERMITTED USE</b>	
Railroad Pass	300	0	211	511	

<sup>a</sup>% Public Land is the percent of public land for billing purposes.

<sup>b</sup>AUMs may differ from Active Permitted Use due to a rounding difference with the number of livestock and the period of use.

### **Other Terms and Conditions:**

1. The permittee agrees to take voluntary non-use of 211 AUMs of the 511 AUM grazing preference, therefore only 300 AUMs of cattle grazing will be authorized during the annual grazing period for the term of this permit.
2. Cattle will be grazed in a rest-rotation system as follows:  
Year 1 (2011, 2013, 2015, 2017, etc.)—North of the drift fence  
Year 2 (2012, 2014, 2016, 2018, etc.)—South of the drift fence
3. Maximum allowable use levels are as follows:
  - a. Perennial native grasses: 50% of current year's growth
  - b. Perennial shrubs and half-shrubs: 50% use on current annual production
  - c. Perennial, non-native seedlings: 65% of current year's growth
  - d. Livestock will be moved to another authorized pasture or removed from the allotment before utilization objectives are met or no later than 5 days after meeting the utilization objectives. Any deviation in livestock movement will require authorization from the authorized officer.
4. Flexibility in livestock numbers will be allowed, not to exceed the active AUMs. Grazing use will occur within the identified grazing period.

### **Additional Stipulations Common to All Grazing Allotments:**

1. Livestock numbers identified in the Term Grazing Permit are a function of seasons of use and permitted use. Deviations from those livestock numbers and seasons of use may be authorized on an annual basis where such deviations are consistent with multiple-use objectives. Such deviations will require an application and written authorization from the authorized officer prior to grazing use.

2. The authorized officer is requiring that an actual use report (form 4130-5) be submitted within 15 days after completing your annual grazing use.
3. Grazing use will be in accordance with the Standards and Guidelines for Grazing Administration. The Standards and Guidelines have been developed by the respective Resource Advisory Council and approved by the Secretary of the Interior on February 12, 1997. Grazing use will also be in accordance with 43 CFR Subpart 4180 - Fundamentals of Rangeland Health and Standards and Guidelines for Grazing Administration.
4. If future monitoring data indicates that Standards and Guidelines for Grazing Administration are not being met, the permit will be reissued subject to revised terms and conditions.
5. The permittee must notify the authorized officer by telephone, with written confirmation, immediately upon discovery of any hazardous or solid wastes as defined in 40 CFR Part 261.
6. The permittee is responsible for all maintenance of assigned range improvements including wildlife escape ramps for both permanent and temporary water troughs.
7. When necessary, control or restrict the timing of livestock movement to minimize the transport of livestock-borne noxious weed seeds, roots, or rhizomes between weed-infested and weed-free areas.
8. The placement of mineral or salt supplements will be a minimum distance of ½ mile from known water sources, riparian areas, winterfat dominated sites, sensitive sites, populations of special status plant species, and cultural resource sites. Mineral and salt supplements will also be one mile from active sage-grouse leks. Placing supplemental feed (i.e. hay, grain, pellets, etc.) on public lands without authorization is prohibited.